

## CLAIMS

1. A location information notifying method for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said computer to which said location information is notified being a plurality of computers including a first computer capable of handling said location information in a first representational format and a second computer capable of handling said location information in a second representational format, said location information notifying method comprising:

a location information generating step of detecting the position of said mobile communication terminal and generating the location information thereof;

a location information converting step wherein, in the event of notifying said location information to said first computer, said location information is converted from an original representational format into said first representational format, and in the event of making notification of location information to said second computer, said location information is converted from said original representational format into said second representational format; and

a location information notifying step of notifying said computers of said location information with the representational format thereof converted.

2. A location information notifying method according to Claim 1, wherein said mobile communication network comprises a plurality of mobile communication networks including a first mobile communication network and a second mobile communication network with differing representational

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formats for location information generated thereby;

wherein said location information generating step generates, on one hand, the location information of a mobile communication terminal belonging to said first mobile communication network in a third

5 representational format, and, on the other hand generates the location information of a mobile communication terminal belonging to said second mobile communication network in a fourth representational format;

and wherein, in the event of notifying said location information of said mobile communication terminal belonging to said first mobile

10 communication network to said computers, said location information is converted in said location information converting step from said third representational format into a representational format which said computers

are capable of handling, and on the other hand, in the event of notifying said location information of said mobile communication terminal belonging to

15 said second mobile communication network to said computers, said location information is converted in said location information converting step

converts from said fourth representational format into a representational format which said computers are capable of handling.

20 3. A location information notifying method according to Claim 1, wherein said first and said second representational formats are one of:

a format representing latitude and longitude information; and

a format representing an administrative district.

25 4. A location information notifying method according to Claim 2, wherein said third or said fourth representational formats are one of:

a format representing identification information provided to base stations of said mobile communication network;

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a format representing identification information provided to wireless communication zones of a predetermined number of said base stations;

a format representing identification information provided to partial areas of wireless zones of said base stations; and

5 a format representing latitude and longitude.

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10 5. A location information notifying method for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said location information notifying method comprising:

a location information generating step of detecting the position of said mobile communication terminal and generating location information with a precision needed by said computer; and

15 a location information notifying step of notifying said computer of said generated location information.

20 6. A location information notifying method according to Claim 5, wherein said location information with a precision needed by said computer includes one of:

location information representing latitude and longitude information; and

location information representing an administrative district.

25 7. A location information notifying method for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said

location information notifying method comprising:

a location information generating step of detecting the position of said mobile communication terminal and generating location information; and

5 a location information notifying step of notifying said computer of said generated location information by adding said generated location information to data transmitted from said mobile communication terminal to said computer.

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10 8. A location information notifying method according to Claim 7, wherein said location information notifying step includes:

a step of notifying to said mobile communication terminal the adding method of said location information from said computer, and notifying said generated location information after said notified adding method.

15 9. A location information notifying method according to Claim 7, further comprising:

a step of detecting a predetermined data sequence within data transmitted from said mobile communication terminal to said computer; and

20 a step of substituting said predetermined data sequence with said location information and transmitting to said computer.

10. A location information notifying method according to Claim 9, wherein said predetermined data sequence is contained within data transmitted from said computer to said mobile communication terminal;

25 and wherein said location information notifying step detects said data sequence in the process of said mobile communication terminal returning data transmitted from said computer, and substitutes this with said location information.

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11. A location information notifying method for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said location information notifying method comprising:

a step of receiving from said computer a request signal requesting location information of said mobile communication terminal;

a location information generating step of detecting the position of said mobile communication terminal in response to said request signal and generating location information; and

... a location information notifying step of notifying said generated location information to said computer.

12. A location information notifying method according to Claim 11, further comprising:

an identification information adding step of adding identification information of said mobile communication terminal to said data transmitted from said mobile communication terminal to said computer, and transmitting to said computer;

wherein said location information generating step determines the mobile communication terminal for which said location information to be generated and generates said location information, based on said identification information contained in said request signal from said computer.

13. A location information notifying method according to Claim 12, wherein said identification information adding step comprises:

a step of detecting predetermined data sequence within data transmitted from said mobile communication terminal to said computer; and

a step for substituting said predetermined data sequence with said identification information.

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14. A location information notifying method according to Claim 13, wherein said predetermined data sequence is contained within the data transmitted from said computer to said mobile communication terminal;

and wherein said identification information adding step detects said data sequence in the process of said mobile communication terminal returning the data transmitted from said computer, and substituting this with said identification information.

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15. A location information notifying method according to either Claim 7 or 11, further comprising:

a notification permission/non-permission determining step of determining whether or not said location information may be notified to said computer;

wherein said location information notifying step notifies said location information based on the determination result in said notification permission/non-permission determining step.

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16. A location information notifying method according to Claim 15, wherein disclosure information regarding whether or not a computer is to have said location information disclosed thereto is stored in predetermined storing means beforehand;

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and wherein said notification permission/non-permission determining step makes said determination by referring to said disclosure information

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stored by said storing means with regard to said computer which is to have said location information disclosed thereto.

17. A location information notifying method according to Claim 16,  
5 wherein said disclosure information is stored in said predetermined storing means beforehand for each mobile communication terminal;

and wherein said notification permission/non-permission determining step makes said determination by referring to said disclosure information stored by said storing means with regard to said computer which is to have said location information disclosed thereto.

18. A location information notifying method according to Claim 15,  
wherein said notification permission/non-permission determining step comprises:

15 a step of making an inquiry to said mobile communication terminal regarding whether or not said location information may be notified to said computer; and

a step of making said determination based on response information from said mobile communication terminal to said inquiry.

19. A location information notifying method according to Claim 15,  
wherein terminal information, relating to whether or not said location information may be disclosed outside of said mobile communication network with regard to a mobile communication terminal, is stored in predetermined  
25 storage means beforehand;

and wherein said notification permission/non-permission determining step makes said determination by referring to terminal information stored in said storage means with regard to said mobile communication terminal

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relating to said location information of which notification is to be made.

20. A location information notifying method according to Claim 15, further comprising an error signal transmitting step of, in the event that it has been determined that transmission is not permissible in said notification permission/non-permission determination step, transmitting a transmission error signal to said mobile communication terminal or said computer to the effect that said location information may not be notified.

21. A location information notifying method according to either Claim 7 or 11, further comprising:

an input screen transmitting step of transmitting input screen data for inputting to said mobile communication terminal specified location information which the user of said mobile communication terminal can specify; and

a specified location information receiving step of receiving from said mobile communication terminal said specified location information input by said user;

wherein said location information notifying step notifies said computer of said specified location information received in said specified location information receiving step, along with said location information generated in said location information generating step.

22. A location information notifying method according to either Claim 7 or 11, wherein said mobile communication terminal comprises position measuring means for measuring its own position;

wherein said location information notifying method comprises a measured location information receiving step of receiving from said mobile

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communication terminal measured location information relating to the position of said mobile communication terminal measured by said position measuring means;

and wherein said location information notifying step notifies said computer of said measured location information received in said measured location information receiving step, along with said location information generated in said location information generating step.

23. A location information notifying method according to any of the Claims 1, 5, 7, or 11, wherein said computer is an information providing server for providing said mobile communication terminal with position-related information relating to the position of said mobile communication terminal.

24. A location information notifying method according to any one of the Claims 1, 5, 7, and 11, wherein said mobile communication terminal is a cellular phone which performs wireless telephone communication.

25. A location information notifying apparatus for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said computer to which said location information is notified being a plurality of computers including a first computer capable of handling said location information in a first representational format and a second computer capable of handling said location information in a second representational format, said location information notifying apparatus comprising:

a first location information generating unit for detecting the position of

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said mobile communication terminal and generating the location information thereof;

a location information representational format converting unit which, in the event of notifying said location information to said first computer,

5 converts said location information from said representational format which is generated into said first representational format, and in the event of notifying said location information to said second computer, said location information is converted from said generated representational format into said second representational format; and

10 a first location information notifying unit for notifying said computer of said location information with the representational format thereof converted.

26. A location information notifying apparatus according to Claim  
15 25, wherein said mobile communication network comprises a plurality of mobile communication networks including a first mobile communication network and a second mobile communication network with differing representational formats for location information generated thereby;

20 wherein said first location information generating unit generates, on one hand, the location information of a mobile communication terminal belonging to said first mobile communication network in a third representational format, and, on the other hand, generates the location information of a mobile communication terminal belonging to said second mobile communication network in a fourth representational format;

25 and wherein, in the event of notifying said location information of said mobile communication terminal belonging to said first mobile communication network to said computer, said location information representation converting unit converts said location information from said

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third representational format into a representational format which said computer is capable of handling, and on the other hand, in the event of notifying said location information of said mobile communication terminal belonging to said second mobile communication network to said computer, said location information representation converting unit converts said location information from said fourth representational format into a representational format which said computer is capable of handling.

27. A location information notifying apparatus according to Claim 25, wherein said first and said second representational formats are one of:  
a format representing latitude and longitude information; and  
a format representing an administrative district.

28. A location information notifying apparatus according to Claim 26, wherein said third and said fourth representational formats are one of:  
a format representing identification information provided to base stations of said mobile communication network;  
a format representing identification information provided to wireless communication zones of a predetermined number of said base stations;  
a format representing identification information provided to partial areas of wireless zones of said base stations; and  
a format representing latitude and longitude.

29. A location information notifying apparatus for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said location information notifying apparatus comprising:

a second location information generating unit for detecting the position of said mobile communication terminal and generating location information with a precision needed by said computer; and

5 a second position notifying unit for notifying said computer of said generated location information.

30. A location information notifying apparatus according to Claim 29, wherein said location information with a precision needed by said computer includes one of:

10 location information representing latitude and longitude information; and

location information representing administrative district.

31. A location information notifying apparatus for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said location information notifying apparatus comprising:

15 a third location information generating unit for detecting the position of said mobile communication terminal and generating location information; and

20 a third location information notifying unit for transmitting said computer of said generated location information by adding said generated location information to data transmitted from said mobile communication terminal to said computer.

32. A location information notifying apparatus according to Claim 31, wherein said third location information notifying unit comprises:

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a receiving unit for receiving notification indicating the adding method of said generated location information added to said data from said computer; and

5 a transmitting unit for adding said generated location information to said data by said method and transmitting.

33. A location information notifying apparatus according to Claim 31, wherein said third location information notifying unit comprising:

10 a detecting unit for detecting a predetermined data sequence within data transmitted from said mobile communication terminal to said computer; and

a substituting unit for substituting said predetermined data sequence with said location information and transmitting this to said computer.

15 34. A location information notifying apparatus according to Claim 33, wherein said predetermined data sequence is contained within data transmitted from said computer to said mobile communication terminal;

20 and wherein said third location information notifying unit detects said data sequence in the process of said mobile communication terminal returning the data transmitted from said computer, and substitutes this with said location information.

35. A location information notifying apparatus according to Claim 31, further comprising:

25 a notification permission/non-permission determining unit for determining whether or not said location information may be notified to said computer;

wherein said third location information notifying unit notifies said

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location information based on the determination result from said notification permission/non-permission determining unit.

36. A location information notifying apparatus according to Claim  
5 35, comprising a disclosure information storing unit for storing therein disclosure information regarding whether or not said computer is to have said location information disclosed thereto;

wherein said notification permission/non-permission determining unit makes said determination by referring to said disclosure information stored by said disclosure information storing unit with regard to said computer which is to have said location information disclosed thereto.

37. A location information notifying apparatus according to Claim  
15 36, wherein said disclosure information storing unit stores said disclosure information for each mobile communication terminal;

and wherein said notification permission/non-permission determining unit makes said determination by referring to said disclosure information stored by said disclosure information storing unit with regard to said computer which is to have said location information disclosed thereto.

20 38. A location information notifying apparatus according to Claim 35, wherein said notification permission/non-permission determining unit comprises:

an inquiry unit for making an inquiry to said mobile communication  
25 terminal regarding whether or not said location information may be notified to said computer; and

a determining unit for making said determination based on response information from said mobile communication terminal to said inquiry.

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39. A location information notifying apparatus according to Claim 35, comprising a terminal information storing unit for storing terminal information relating to whether or not said location information may be disclosed outside of said mobile communication network with regard to a mobile communication terminal;

wherein said notification permission/non-permission determining unit makes said determination by referring to said terminal information stored in terminal information storing unit, regarding said mobile communication terminal relating to said location information of which notification is to be made.

40. A location information notifying apparatus according to Claim 35, comprising an error signal transmitting unit for, in the event that it has been determined that transmission is not permissible by said notification permission/non-permission determining unit transmitting a transmission error signal to said mobile communication terminal or said computer to the effect that said location information may not be notified.

41. A location information notifying apparatus according to Claim 31, comprising:

an input screen transmitting unit for transmitting input screen data for inputting to said mobile communication terminal specified location information which the user of said mobile communication terminal can specify; and

a specified location information receiving unit for receiving from said mobile communication terminal said specified location information input by said user;

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wherein said third location information notifying unit notifies said computer of said specified location information received by said specified location information receiving unit, along with said location information generated by said third location information generating unit.

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42. A location information notifying apparatus according to Claim 31, wherein said mobile communication terminal comprises a position measuring unit for measuring its own position;

wherein said location information notifying apparatus comprises a measured location information receiving unit for receiving from said mobile communication terminal measured location information relating to the position of said mobile communication terminal measured by said position measuring unit;

and wherein said location information notifying unit notifies said computer of said measured location information received by said measured location information receiving unit, along with said location information generated by said location information generating unit.

43. A location information notifying apparatus for notifying a predetermined computer of location information of a mobile communication terminal obtained on a mobile communication network which contains mobile communication terminals capable of wireless communication, said location information notifying apparatus comprising:

a receiving unit for receiving a request signal from said computer requesting location information of said mobile communication terminal;

a fourth location information generating unit for detecting the position of said mobile communication terminal in response to said request signal and generating location information; and

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a fourth location information notifying unit for notifying said generated location information to said computer.

44. A location information notifying apparatus according to Claim  
5 43, further comprising:

an identification information adding unit for adding identification information of said mobile communication terminal to said data transmitted from said mobile communication terminal to said computer, and transmitting this to said computer;

wherein said fourth location information generating unit determines the mobile communication terminal for which location information is to be generated and generates said location information, based on said identification information contained in said request signal from said computer.

45. A location information notifying apparatus according to Claim  
15 44, wherein said identification information adding unit comprises:

a detecting unit for detecting predetermined data sequences within data transmitted from said mobile communication terminal to said computer; and

20 a substituting unit for substituting said predetermined data sequence with said identification information.

46. A location information notifying apparatus according to Claim  
25 45, wherein said predetermined data sequence is contained within the data transmitted from said computer to said mobile communication terminal;

and wherein said identification information adding unit detects said data sequence in the process of said mobile communication terminal returning data transmitted from said computer, and substitutes this with said

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47. A location information notifying apparatus according to Claim 43, further comprising:

5 a notification permission/non-permission determining unit for determining whether or not said location information may be notified to said computer;

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10 wherein said fourth location information notifying unit transmits said location information based on the determination result from said notification permission/non-permission determining unit.

48. A location information notifying apparatus according to Claim 47, comprising a disclosure information storing unit for storing therein disclosure information regarding whether or not a computer is to have said location information disclosed thereto;

15 wherein said notification permission/non-permission determining unit makes said determination by referring to said disclosure information stored by said disclosure information storing unit with regard to said computer which is to have said location information disclosed thereto.

20 49. A location information notifying apparatus according to Claim 48, wherein said disclosure information storing unit stores said disclosure information for each mobile communication terminal;

25 and wherein said notification permission/non-permission determining unit makes said determination by referring to said disclosure information stored by said disclosure information storing unit with regard to said computer which is to have said location information disclosed thereto.

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50. A location information notifying apparatus according to Claim 47, wherein said notification permission/non-permission determining unit comprises:

an inquiry unit for making inquiry to said mobile communication  
5 terminal regarding whether or not said location information may be notified to said computer; and

a determining unit for making said determination based on response information from said mobile communication terminal to said inquiry.

51. A location information notifying apparatus according to Claim 47, comprising a terminal information storing unit for storing terminal information relating to whether or not said location information may be disclosed outside of said mobile communication network with regard to a mobile communication terminal;

wherein said notification permission/non-permission determining unit makes said determination by referring to terminal information stored in said terminal information storing unit, regarding said mobile communication terminal relating to said location information of which notification is to be made.

52. A location information notifying apparatus according to Claim 47, comprising an error signal transmitting unit for transmitting, in the event that it has been determined that transmission is not permissible has been made by said permission/non-permission determining unit, a transmission error signal to said mobile communication terminal or said computer to the effect that said location information may not be notified.

53. A location information notifying apparatus according to Claim

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43, comprising:

an input screen transmitting unit for transmitting to said mobile communication terminal input screen data for inputting specified location information which the user of said mobile communication terminal can

5 specify; and

a specified location information receiving unit for receiving from said mobile communication terminal said specified location information input by said user;

wherein said fourth location information notifying unit notifies said computer of said specified location information received by said specified location information receiving unit, along with said location information generated by said fourth location information generating unit.

54. A location information notifying apparatus according to Claim 15 43, wherein said mobile communication terminal comprises a position measuring unit for measuring its own position;

wherein said location information notifying apparatus comprises a measured location information receiving unit for receiving from said mobile communication terminal measured location information relating to the 20 position of said mobile communication terminal measured by said position measuring unit;

and wherein said fourth location information notifying unit notifies said computer of said measured location information received by said measured location information receiving unit, along with said location information 25 generated by said fourth location information generating unit.

55. A location information notifying apparatus according to any one of the Claims 25, 29, 31, and 43, wherein said computer is an information

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providing server for providing said mobile communication terminal with position-related information relating to the position of said mobile communication terminal.

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56. A location information notifying apparatus according to any one of the Claims 25, 29, 31, and 43, wherein said mobile communication terminal is a cellular phone which performs wireless telephone communication.

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